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SOVIET CAPABILITY FOR WAGING ELECTROMAGNETIC WARFARE

I would like to discuss the Soviet capabilities for waging electromagnetic warfare against Western countries. We define electromagnetic warfare as the contest through preclusive use, jamming, interference and related measures for the control of all or parts of the radio spectrum or the denial of its use by others.

The Soviets have been active in all of these fields. They appear to have established and are operating many stations, particularly in the broadcasting field, in excess of the number required to fill their legitimate needs, thus denying the use of these frequencies to other countries.

The Soviets started jamming broadcasting during the second World War. Organized jamming of the Voice of America and British Broadcasting Corporation programs to the Soviet Union began in 1948. By April 1949, it had developed into a concentrated, extensive and effective program.

At present, a curtain of jamming exists throughout the European portion of the Orbit and to a lesser extent throughout the Soviet Far East. Recently RIAS (Radio in the American Sector, Berlin) broadcasts to Germany have been jammed and there are indications that powerful transmitters are being constructed in the SovZone to further nullify RIAS and other broadcasts. In January of this year, the USSR jammed the internal broadcast system of Denmark when a program that the

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Soviets considered objectionable was broadcast for Danish internal consumption.

Their jamming system has reached a size and proficiency such that today, the Soviets have the capability of completely disrupting our radio circuits used for intercontinental and long range mobile communications, broadcasting and navigation. The chart before you is a Polar plot of the Northern Hemisphere showing our principal overseas radio communications circuits. You will note that the receiving stations of all of these are much closer to the Soviet Union than to our transmitters. Jamming is a powerful weapon for use in either the psychological and political war or in an active military situation since today 75% of our military and 40% of our commercial traffic to Europe and 100% of military and 81% of commercial traffic to the Far East is via radio.

It is interesting to note that in the first general postwar international radio conferences (Moscow and Atlantic City, 1946-47), the Soviets were cooperative and agreed to a new program of cooperative world-wide use of radio frequencies. In the 1948 and succeeding conferences, the Soviet attitude was completely changed and all their activity has been directed toward "hamstringing" the principal of international cooperation in communications.

If we consider the requirements for an effective jamming system of this magnitude, we see that they are transmitting stations, listening stations, communications and control facilities between the various stations, and trained personnel. Any radio transmitter that can be tuned to a desired frequency is a potential jamming transmitter. This map shows the radio stations in Russia that are associated with the internal point-to-point communications system. There are many hundreds of these transmitters. In addition, there are hundreds more broadcasting, marine, aviation, military, meteorological and other types of transmitters.



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It has been estimated that between 500 and 1000 transmitters are at present being used to jam these programs.

By observation of their operations, we are convinced that they have several extensive listening networks which are the eyes and ears of their various jamming and radio activities, and finally, on the question of trained personnel, it is self-evident that the jamming activities extending over a period of several years and involving possibly 1,000 transmitters and many listening and control stations have produced a reservoir of trained personnel for this purpose, the like of which does not exist outside the Soviet Union.

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In conclusion, I would like to say that the Soviets have built a very powerful weapon for use against the legitimate communications interests of the rest of the world and I believe they will utilize it whenever they consider it expedient.

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